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Learning in the context of 'co-creation of educational practices'

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9. LEARNING IN THE CONTEXT OF ‘CO-CREATION OF EDUCATIONAL PRACTICES’

INTRODUCTION

Together with some secondary schools, the Teacher Education department at the University of Groningen in the Netherlands decided in 2002 to develop a method involving collaboration by experienced teachers and student teachers in accordance with the principles of educational action research. Working closely together, they develop, apply, and evaluate new educational practices based on teaching and learning issues selected by the experienced teachers. The method is called *Co-Creation of Educational Practices* (CCEP).

There were several reasons for introducing this method. Firstly, although several educational reforms had been introduced at the organizational level in many Dutch secondary schools, almost nothing had changed in the teachers' day-to-day practice. This was largely due to the top-down approach of the Dutch government regarding the reforms, which did not encourage teachers to implement the desired changes. In addition, new ideas about school policy led to considerable autonomy for schools, with school managers gradually taking over the government's role, and teachers feeling increasingly that they were implementing policy developed by their school managers (Kallenberg, 2004). Again, this did not motivate teachers to change their teaching practices. It is against this background that schools and the department of Teacher Education developed CCEP. School managers expected the CCEP method to stimulate the professional development of experienced teachers and hence curriculum development and the learning culture of the school. The structure of a CCEP project, the application of the principles of educational action research, and the participation of student teachers and their teacher educators could offer experienced teachers opportunities to increase their knowledge and change their teaching practices.

Secondly, the department of Teacher Education had its own reasons for developing CCEP. In the late 1990s, school-based teacher education became increasingly important. In such a context, CCEP offers an opportunity to optimize student teachers' learning possibilities in schools: they participate in a CCEP project as real teachers and not just as 'students'. As such, they are able to bring new insights into the project and hence into practice.

Both schools and the department of Teacher Education expected CCEP to encourage the professional development of experienced and student teachers. In

this article, we report on the results of a four-year research project on CCEP. We address the following question: in what way and under what conditions does the CCEP method encourage the professional development of student teachers and experienced teachers? The answer to this question may help to improve the method, as well as the circumstances under which CCEP takes place in schools. Our research findings on CCEP can also be used to design what are known as 'Academic Schools', which combine teacher education, continuing education, educational development, and action research (Ministerie van OC&W, Ministry of Education, Culture and Science, 2005). Currently, there are several such pilot schemes in the Netherlands, in both primary and secondary schools.

THEORETICAL FRAMEWORK

CCEP and its relationship to educational action research

The CCEP method is based on the following principles of educational action research (Ponte, 2002b):

- action research focuses on the teachers' own actions and on the situation in which they practise;
- the teachers reflect on information that they themselves have systematically gathered;
- action research occurs in dialogue with colleagues inside and outside the school;
- action research uses students as an important source of information. (p. 22).

For our purposes, the 'teachers' referred to in these action research principles are student teachers in co-operation with experienced teachers. We adopted Ponte's principles of educational action research because they accord with our own views on action research at the Teacher Education department. Ponte (2002a, 2002b) based her work on the ideas of Stenhouse (1975), Carr and Kemmis (1986/1997) and Elliot (1991). In their approaches to educational action research, 'teachers determine the agenda of their own project, shape their practice based on the insights and understanding they themselves have developed, and use these insights and understanding as an integral part of their action research' (Ponte, 2002b, p. 34). Within this approach, there are various views on how and why teachers can use action research. 'Teachers can work on aspects of their practice in which they themselves can take an active part. These aspects could be related to both classroom practice and school organization. Individually or in groups, teachers can initiate action research in schools' (Ponte, 2002b, p. 45). In the specific case of the CCEP method, in which both student teachers and experienced teachers are involved, the purpose is *didaktisch*¹, and the initiative for the project, or at least for the project theme, comes from the experienced teachers.

CCEP and its relevance as a professional development strategy

Outcomes of recent research projects (e.g., Engelen, 2002; Kwakman, 1999; Van Eekelen, 2005; Van Driel, 2006) show that features such as self-guidance, reflection, collaboration, and learning in the workplace are very important in the professional development of teachers. Because educational action research integrates these different features, it seems an appropriate strategy for professional development. It would appear to be a suitable alternative to more traditional types of professional development such as courses and workshops (Busman, Horsmans, Klein & Oomen, 2007), which often suffer from lack of transfer (Hayes, 1997; Westhoff, 2001). It is also in keeping with new insights into ongoing professional development, in which teachers are actively engaged in their own development.

Educational action research as a professional development strategy can be carried out by both experienced teachers and student teachers. In school-based teacher education programmes, action research ties in perfectly with student teachers' on-the-job education. It enables them to actively shape their own development based on concrete practical experience. As such, the CCEP method can be seen as a combined professional development strategy for both experienced teachers in the school and student teachers enrolled in a school-based teacher education programme.

CCEP and its impact on both student teachers and experienced teachers

Several studies have demonstrated the positive effects of educational action research on the professional development of individual experienced teachers (e.g., McDonough, 2006; Nevarez-La Tore & Rolon-Dow, 2000; Ponte, 2002a; Reis-Jorge, 2007; Ross, Rolheiser & Hogaboam-Gray, 1999) and individual student teachers (e.g., Chant, Heafner & Bennett, 2004; Geldens, Van Himbergen & Steinfort, 2006; Ginns, Heirdsfield, Atweh & Watters, 2001; Gore & Zeichner, 1991; Verkroost, 1999). Studies that researched the combination of experienced teachers, student teachers, and university researchers or supervisors have also shown positive effects on the professional development of all participants (e.g., Balach & Szymanski, 2003; Catelli, 1995; Friesen, 1994; Raisch, 1994). The combination that interests us in the context of CCEP, namely collaboration between experienced teachers and student teachers, has received relatively little attention, although it is recommended by various authors because of the supposed added value of having experienced teachers and student teachers engage in co-operation and professional dialogue about teaching and learning (Cochran-Smith & Lytle, 1993; Rosaen & Schram, 1997). The studies into such collaboration that we have encountered (Atay, 2006; Burbank & Kauchak, 2003; Levin & Rock, 2003) have also shown positive effects on the professional development of teachers and student teachers, although they did find differences in learning outcomes between the two groups. Atay (2006) linked six experienced teachers, who contributed the project theme following an educational programme, to six student teachers who would carry out the actual research. The method had a positive impact on the

professional development of the experienced teachers by broadening their perceptions of research, helping them recognize the value of collaboration, and encouraging them to implement new instructional practices. The additional effect for the student teachers was enrichment of their (writing) skills and (instructional) knowledge. In a study by Burbank and Kauchak (2003) of ten student teachers and ten experienced teachers/supervisors, the former group selected the project theme. It was shown to be a vehicle to improve teaching, to examine research and to encourage dialogue about teaching and research, with the experienced teachers ultimately being more positive about the results of action research than the student teachers. In a study by Levin and Rock (2003), five student teachers and five experienced teachers/supervisors selected the project theme in consultation. In this case, the learning outcomes for the student teachers were considerably greater and more varied than for the teachers. The learning outcomes for the student teachers included improved understanding of themselves as teachers, of their students, and of their roles and responsibilities as teachers. The experienced teachers developed a new understanding about their students and about teaching/instruction. They also attested to learning in the areas of curriculum content, collaboration, and knowledge of the action research process.

If we summarize the impact of educational action research on the professional development of experienced teachers and student teachers collaborating in educational action research, we can say that, although the three research projects mentioned above differ from one another on several points in design – for example, the participants' roles and how the project theme was selected – learning effects generally occur in the following three areas:

- new understanding of students and teaching/instruction;
- collaboration and dialogue;
- perceptions and knowledge of research/action research.

These learning effects, particularly the first one, support the expectation of the schools and the department of Teacher Education that CCEP encourages experienced teachers to develop their knowledge and change their teaching practices, thereby optimizing learning opportunities in the schools for student teachers.

Conditions for CCEP

The above-mentioned studies by Atay (2006), Burbank and Kauchak (2003), and Levin and Rock (2003), in which student teachers and experienced teachers collaborated, also looked at enabling and constraining conditions surrounding the setting-up, implementation and supervision of educational action research. The supporting factors found by Atay (2006) were, firstly, that the teachers who were volunteers felt a need for professional growth, and secondly, that there were no time constraints because student teachers did most of the time-consuming work of implementing the research project. Burbank and Kauchak (2003), however, found that time was a constraining factor for the student teachers: they had to take part in action research while wrestling with the demands of being novice teachers. As

enabling factors, they mentioned common project goals among team members, structural opportunities for working as a team, and similarities between the developmental needs of the participants. Constraining factors identified by Levin and Rock (2003) included time constraints imposed on student teachers by their internship schedule, problems with collaboration and dialogue, and the role perception of experienced teachers, who saw themselves primarily as mentors and less as co-researchers. Supporting factors they observed were collaboration between student teachers and experienced teachers, and more specifically the dialogue within this collaboration.

In the case of educational action research carried out by individual student teachers, Verkroost (1999) suggests as an enabling factor the availability of teacher educators who are experienced in action research, and who collaborate with each other in an 'action research' way. Ginns, Heirdsfield, Atweh and Watters (2001) found security and support as supporting factors, and Geldens, Van Himbergen and Steinfort (2006) identified as positive the meaningfulness of the project themes which could generate ownership, being able to contribute to school development and the school's appreciation of this, experiencing the usefulness and purpose of action research, co-operation and enthusiasm of teachers at the school, clear and effective supervision, and collaboration with other student teachers. Geldens, Van Himbergen and Steinfort (2006) observed as significant constraining factors problems of time and planning, school teachers who showed no interest and were not co-operative, a lack of research mentality, research skills and understanding of action research within the school, and a lack of clarity about matters such as supervision.

In the case of action research carried out by individual experienced teachers, Ponte (2002a) names as constraining factors time constraints, the fact that the skills to carry out action research are not always present, that the method can be challenging, and that not all teachers want to improve their practice through research. However, coaches who are experienced in carrying out action research can have a high degree of positive influence on teachers engaged in such research (Ponte, 2002a). Kemmis and McTaggart (1988,) make the following recommendations based on their experience:

Start small, with a small group, negotiate meeting times, articulate a thematic concern and establish agreement that this concern is shared, establish a time-line for the action research cycle, arrange supportive work-in-progress discussions, work with 'critical friends', register progress not only with the participant group but also with the staff as a whole and other interested parties, make time to write, and be explicit about what has been achieved by reporting progress. (p. 25-26)

When we examined these results, it seemed critical to our CCEP method that several conditions should be present when student teachers and experienced teachers carry out action research together. Based on the supporting and hindering factors found in the literature, the following conditions seem to be essential in carrying out CCEP:

- the project's theme and goals must be shared by all participants;
- there must be sufficient working time and meeting time scheduled into a timetable, and appropriate time should be available for the student teacher;
- the project should include collaboration and dialogue, particularly with regard to project content;
- there needs to be communication within the school with other teachers and with school management about the project's progress and results;
- participants must have the requisite perceptions, knowledge and skills, and be coached with respect to educational action research.

METHOD

The CCEP method

The CCEP method is embedded in the school-based teacher education programme of the Teacher Education department at the University of Groningen. As part of the programme, student teachers are appointed temporarily to a school, with an average of eight lessons a week for one school year. Schools should therefore have one, or preferably more, vacancies for student teachers. For the purposes of CCEP, it is essential that experienced teachers participating in a CCEP project teach the same subjects as the student teachers and have a teaching problem that they would like to solve or vision that they would like to implement in a joint project with student teachers.

With regard to implementation, different participants fulfil different roles. One of the school teachers acts as project manager; he or she writes the plan and is responsible for the project's progress. The other teachers involved are participants in the project. The school principal supports the project and takes care of working conditions, such as allocating time for teachers to work on the project and ensuring timetabled meetings for all teachers. The student teachers' work on a project ties in with an assignment at the teacher education institute (9 ECTS, 250 hours). In general, the student teachers do most of the implementation work in the projects, with one or more teacher educators from the teacher education institute acting as critical friends and as experts in the field of teaching and action research. Student teachers are matched with their schools by a central project manager from the teacher education department, who informs all participants about the rules, the roles of all participants, how they should work together, and so forth. Figure 1 presents the CCEP method, and Figure 2 briefly outlines two exemplary CCEP projects.

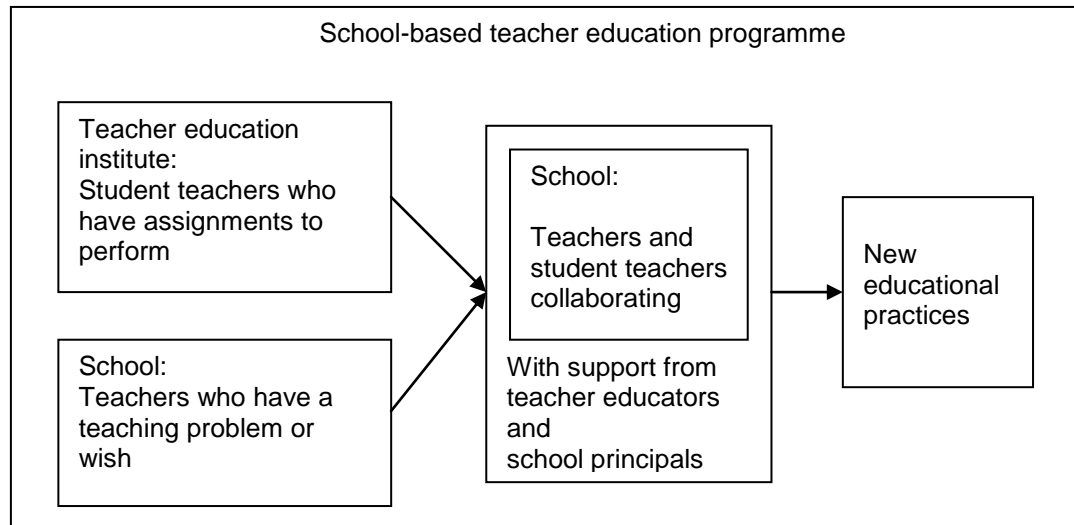


Figure 1. The Co-Creation of Educational Practices (CCEP) method

The language quest

One secondary school, part of a large combined school, opted for a teaching philosophy that would boost modern language teaching using IT. A team made up of foreign-language teachers and a student teacher of English, supervised by the English-teaching teacher educator from the teacher education department, began by examining how they could give form and substance to the philosophy in their teaching. This exploration included a literature review. They decided on the language project or quest (*talenquest* in Dutch), and opted for a collaborative method of learning. In close consultation with experienced teachers about objectives, theme, level and scope, and with the IT co-ordinator regarding IT preconditions, the student teacher drew up a draft programme for the language quest. The team as a whole worked on the study guide for students. The language quest was implemented by the experienced teachers and the student teacher during a specially organized project week. The evaluation by school management, teachers, pupils, and their parents provides pointers for an annual language quest.

Supervising and assessing practical assignments

A regional combined school was having problems with assessing and supervising practical assignments at the upper levels of secondary education (HAVO/VWO). Led by an experienced teacher of economics and supervised by their teacher educators, three student teachers (economics, history, geography) studied the situation of the teachers in these fields. On the basis of their findings, the student teachers and the experienced teacher together developed a draft plan for a practical assignment, which was then elaborated and tested for the different subjects. Regular discussions on progress took place throughout the school year with the teachers and school management. Evaluation involving both teachers and students produced recommendations and instruments for drawing up, supervising, and assessing practical assignments.

Figure 2. Two examples of CCEP projects

Participants

From 2002 until 2006, a total of 38 student teachers were involved in 23 CCEP projects at 11 schools. Of the 38, five student teachers from four projects abandoned their teacher education during the academic year, and six were unable to continue the project for various reasons. That left 27 student teachers, spread across 18 projects. Due to illness, two of the 27, working on two projects, had not yet completed the project at the time of writing. We also had insufficient data for three student teachers. Our study is accordingly based on 22 student teachers across 16 projects.

With regard to the experienced teachers, teachers were barely active or non-active in nine of the 16 remaining CCEP projects (with a total of about 30 teachers), there was occasional consultation in six projects, while in three cases teachers were at some point absent altogether. In the remaining seven projects, the experienced teachers – 12 in total – were actively engaged. Of these 12, seven ultimately took part in the study. The team composition was different for each of the 16 projects, ranging from one experienced teacher with one to three student teachers to four experienced teachers and one student teacher.

Data collection

Each project lasted a full school year, with data collection occurring as follows. Throughout the year, the student teachers and experienced teachers were asked at least twice to briefly outline by email the progress of the project. Midway during the school year, a meeting was arranged with student teachers, experienced teachers, and teacher educators from all established CCEP projects to discuss the

progress of the different projects and the factors that influenced the process. At the end of the school year, all student teachers and experienced teachers involved in projects filled out a written questionnaire about their learning experiences, the strengths of the CCEP method, and the areas for improvement. The email messages, the reports of the meetings, and the results of the questionnaires were available as research materials.

Data analysis

We used different methods to analyze the learning effects of CCEP and the factors constraining and enabling this method. For the learning effects collected from the questionnaire, we followed a grounded theory approach: by reading and re-reading the data, we saw themes emerge and were able to label them (e.g., Strauss & Corbin, 1998). For the list of hindering and supporting factors derived from the emails, meetings with participants and the questionnaire, we used the five factors found in the literature as criteria for analysis:

- the choice of the project's theme and goals;
- the time factor;
- collaboration and dialogue within the project;
- communication about the project within the school;
- the perceptions, knowledge and skills, and coaching in the field of educational action research.

A diagram was drawn with these five criteria on the horizontal axis and the school projects on the vertical axis. Using the data collected, each school project was given two scores (plus, minus or absent) on each criterion, one for experienced teachers, the other for student teachers.

In the next section we present our results, illustrating them with concrete examples and quotes from the participants. The learning effects will be discussed in the light of the learning themes that emerged; the enabling and constraining conditions will be discussed in the light of the factors encountered. All names appearing in this study are pseudonyms.

RESULTS

What, and how, student teachers say they have learned from CCEP

The student teachers in this study reported that they had learned most in the areas of planning and implementing instruction, always in relation to the theme of their CCEP project, for example, in the fields of teaching writing, collaborative learning, e-learning, pupil reflection, and portfolios. They said that they learned from the theory in that field, from using theory to plan teaching (for example, to develop assignments, set up a course in an electronic learning environment, write (digital) instructions) and from putting it into practice with students (for example, handling

student differences when teaching letter writing, or learning how students respond to certain tasks).

Secondly, student teachers quite frequently reported that they learned a great deal about the process of implementing an educational development project in a school, for example, planning, knowing who needs to be consulted in the school, and knowing that it takes a lot of time and effort to start up a project in a school.

I learned how long it takes to set up a usable project for school: you have to consult with colleagues, to wait for help from different departments, changes have to be made, and so forth. (Suzanne, student teacher 2005-2006)

The third theme, mentioned only in passing by student teachers, is that they learned how to conduct research. Clearly, however, this does not play a significant role for the student teachers.

The student teachers reported that they learned from different sources. They learned from one another by collaborating, discussing ideas, and sharing tasks. They also mentioned that they learned a significant amount from their students. In particular, they learned from experienced teachers with whom they worked very closely.

I have worked very well with an experienced teacher; I learned a lot from her. (Harro, student teacher 2005-2006)

What, and how, experienced teachers say they have learned from CCEP

The experienced teachers also reported that they learned from the project. As with the first theme mentioned by the student teachers, most learning occurred in relation to planning and implementing instruction. What emerges for the experienced teachers is that the emphasis often lies on the unexpected possibilities of methodologies that were previously unknown to them, for example, in the area of collaborative learning, or the use of IT, and the unexpected positive effects these had on students.

I found it very eye-opening to see that this type of methodology is very motivating and dynamic. (Gineke, teacher 2002-2003)

A second learning theme also reported by some experienced teachers was the process of an educational development project in the school. One teacher focused on his role as school project leader, in particular convincing the teaching team of the benefits of educational development.

It's difficult to summarize what I have learned. Maybe it's that by doing the project, I've been in a better position to see who can contribute, in which positions, to school development, and how important it is to take a development question from the team as our starting point. (Bastiaan, teacher 2004-2005 and 2005-2006)

The teachers also reported that they learned from different sources. They mentioned learning by collaborating, discussing ideas, and sharing tasks. They learned from one another, and sometimes from colleagues who were not generally involved in subject development, from their students, and from their student teachers, who can sometimes be described as experts because they have read widely on the area in question. One teacher also reported that working with a student teacher had made her aware of the limitations of this type of collaboration.

In addition, I learned that it really is difficult for a beginning teacher to decide what to include and what not to include, and how to then present the material. That requires quite a lot of supervision and consultation. (Marleen, teacher 2005-2006)

Conditions that support CCEP in the view of student teachers

The first supporting factor is the choice of project theme and goals, which in principle came from teachers in the schools for all projects. Surprisingly, in almost all cases, student teachers had no difficulty making themselves co-owners of the themes and objectives. This also helped them to quickly establish a bond with the school. For example, they were required to investigate certain matters, which meant establishing contacts within the school.

Through CCEP, the student teacher has a lot of involvement with the theme at the school. (Lea and Marie, student teachers 2005-2006)

Secondly, several student teachers found the factor of time – especially in the sense of working and ‘thinking time’ – to be encouraging, on the one hand because they did not have to spend time creating their own theme, and on the other hand because the theme was fixed at the beginning of the school year, giving them plenty of time to think about it.

The third and final supporting factor was ‘collaboration and dialogue in the project’. This applied to collaboration with both an experienced teacher, which meant student teachers did not have to conceive every idea themselves, and with other student teachers, which allowed them to glean ideas from one another and to share tasks.

Conditions that support CCEP in the view of experienced teachers

Experienced teachers saw time, in the sense of the working time available to student teachers, primarily as a supporting factor.

Both student teachers had time to read up properly on the subject. (Gard, teacher 2003-2004)

One experienced teacher also mentioned collaboration and dialogue within the project and school as a supporting factor.

Conditions that constrain CCEP in the view of student teachers

In the same way that choice of project theme and goals can support student teachers, it can also constrain their work within a CCEP project if there is insufficient support from teachers. In three of the nine projects that were eventually completed by the student teachers alone, support from teachers proved to be less than envisaged at the beginning of the project, and it was above all school management that wanted school development.

It turned out that it wasn't really a school problem, with a teacher who really wanted a solution to that problem. There were departmental colleagues who were interested in what I was doing, but they didn't spend any time thinking about it. (Tim, student teacher 2004-2005)

In a few cases there was an enthusiastic school project leader, but the student teachers experienced resistance from teachers who were indirectly involved in the project, but who turned out not to support it.

In the beginning there was great confusion and resistance among colleagues at the school where I did my teaching practice. That undermined the success of the project. (Rianne, student teacher 2004-2005)

A second key hindering factor is that of time, especially in the sense of teacher working time and scheduled meeting times in the timetable. In the remaining six of the nine CCEP projects that the student teachers eventually completed by themselves, there was sufficient support for the development of the theme, but the experienced teachers did not have the time to become actively involved. In these six cases, collaboration was confined to fairly regular consultation, for example, during the monthly departmental meetings. But time was also a problem in the seven projects involving active teachers – time in the sense of teacher working time and meeting time.

There was less and less collaboration with teachers as the school year went on because there was not enough time available. (Jannie and Susy, student teachers 2003-2004)

It was difficult to arrange meetings to work on the module. (Harro, student teacher 2005-2006)

A third and final constraining factor relates to communication within the school, with some student teachers experiencing a lack of contact with school management.

Conditions that hamper CCEP in the view of experienced teachers

For experienced teachers, time was the most important hampering factor. Once again, this involves working and meeting time.

Many of those involved at school also had other duties, so there was often too little time to really get involved. (Bastiaan, teacher 2004-2005 and 2005-2006)

In addition, a few teachers mentioned as a second constraining factor the fact that, on closer inspection, there was a lack of sufficient support for the project theme among teachers, combined with a school management that tolerated this lack of commitment. Two of the seven teachers explicitly stated that they had experienced no hindering factors.

CONCLUSION AND DISCUSSION

Both schools and the department of Teacher Education expected CCEP to encourage the professional development of experienced and student teachers. In this chapter, we reported on the results of a four-year research project on CCEP. We were seeking to discover how, and under what conditions, the CCEP method stimulates the professional development of student teachers and experienced teachers.

We can conclude that both groups learn from this method, particularly in terms of planning and implementing instruction. The schools and the Teacher Education department are therefore correct in their expectation that CCEP would encourage experienced teachers to increase their knowledge and change their teaching practices, thereby optimizing opportunities for student learning in the schools. From the point of view of student teacher learning, it appears critical that student teachers and experienced teachers co-operate closely. It is encouraging to note that experienced teachers also report that they learn from what student teachers bring to the projects.

Apart from the collaboration and dialogue that both groups felt was helpful, in terms of constraining and enabling conditions for CCEP, it emerged that the enabling conditions relate mainly to student teachers (ownership of the project's theme and goals, and available time), and that the constraining conditions for experienced teachers lie in the same two areas, but then in reverse (lack of ownership of the project's theme and goals, and lack of time). Because of these last two factors, only seven of the 16 projects launched as CCEP projects actually ended as such (see, for example, the two exemplary CCEP projects described in Figure 2).

Due to positive learning effects on the one hand, and to the key constraining conditions on the other, we would like – following on from the findings of our study – to present recommendations that are primarily designed to increase the ownership and accountability of experienced teachers (cf. Levin & Rock, 2003), with the aim of both improving the learning context for student teachers, and strengthening the method as a professional development strategy for experienced teachers. Below we mention five recommendations and give a brief explanation of each.

1. Ensure that the action research questions really emerge from the interests and concerns of the experienced teachers.

The challenge for school management is not to prescribe the developmental theme for the experienced teachers, but, having checked whether this professional development strategy is in fact of interest to them (Ponte, 2002a), to let them decide on a theme that relates effectively to their own actions and situation in order for ownership to develop (Van der Waals, 2001).

2. Give the experienced teachers not only enough working and thinking time, but also meeting time scheduled into the timetable.

The combination of explicit allocation of working time and the concrete scheduling of meeting time into the timetable might reduce the current tension between working on long-term problems that generally take up considerable time and the pressure of day-to-day work that tempts teachers to opt for short-term, ad-hoc solutions (Ponte, 2002a).

3. Establish ways for experienced teachers to receive credit for their efforts.

Levin and Rock (2003) describe crediting the efforts of experienced teachers by giving them renewal credits from their district, or university credits. In the Dutch context, participating in a CCEP project as a professional development activity could be included in the skills dossier that has been obligatory for all teachers since 2006 (De Bont, Van Drunen, Jansma, Koot & Plomp, 2006).

4. Ensure that there is an effective communications infrastructure within the school, in particular one that is supported by school management.

School management plays a key role in communication about the project through, say, regular discussions of progress, or through providing a wider audience by, for example, setting up informal group presentations in the school (Levin & Rock, 2003).

5. Provide sufficient instruction and support for experienced teachers in the field of educational action research.

Student teachers receive instruction and coaching in the field of educational action research as part of their teacher education, but teachers in schools receive no special preparation or supervision. Although not mentioned by teachers as a constraining factor, unfamiliarity with educational action research will certainly have played a part to some degree. Supervision in particular is shown to be an important condition if educational action research is to be conducted successfully (Ponte, 2002a, 2002b). Conspicuous in our study is the fact that three of the seven 'active' teachers in the CCEP projects had taken part in an action research project as part of their teacher education; the remaining four felt very positively about action research and saw the opportunities that it offers. An additional advantage of having experienced teachers with expertise and skills in educational action research is that it makes it more likely that student teachers will continue to work in this

way after their teacher education programme has concluded (Gitlin, Barlow, Burbank, Kauchak & Stevens, 1999).

For a follow-up study, once the recommendations have been implemented, it would be of both practical and theoretical interest to examine in greater detail and with more participants (experienced teachers in particular) the collaboration between experienced teachers and student teachers, especially in terms of what characterizes this collaboration, and whether this affects learning outcomes. Our research suggests that both groups find collaboration instructive and stimulating, although we encounter different views and research outcomes in the literature. Friesen (1994), for example, found that the different roles of the collaboration participants disappeared; for Ponte (2002a), action research projects involving collaboration between teacher educators, researchers, teachers, and student teachers seem to be the most successful. Raisch (1994) found, however, that it was easier for teachers to work with one another than with student teachers. Van Eekelen (2005) concluded that teachers claim not to learn from interaction with partners who occupy a higher or lower position in the hierarchy, and Burbank and Kauchak (2003), who emphasize the importance of similarities in the developmental needs of student teachers and experienced teachers, wonder whether true collaboration is possible if student teachers are also being assessed.

Our study shows that educational action research embedded in a school-based teacher education programme, as in our CCEP method, is not only a very interesting strategy for professionalizing student teachers (it makes the initial teacher education more relevant and developmental), but, thanks to the presence of student teachers, it can also be highly stimulating for experienced teachers if the above conditions are met. We found that the efforts of student teachers in school projects especially have a major impact on the success of the projects as a whole. Because of their energy, their openness to new approaches and ideas, the time they have for the project, and their willingness to bring it to completion before the school year ends, student teachers give projects a certain momentum which sweeps the experienced teachers along. Despite the constraining factors, the CCEP procedure was relatively highly valued by both student teachers (even when it ultimately turned out not to be a CCEP project) and by experienced teachers. It scored an average of 8 points (out of a total of 10).

Highly instructive, but energy and time-consuming. But mentioning my CCEP project work on my CV has helped me to find a job! (Marieke, student teacher 2005-2006)

Although CCEP may sometimes be difficult in practice, it is very much worth the effort. We also face the challenge of putting into practice the above recommendations for improving the method. In addition, the Academic Schools, although differently organized, could benefit in terms of their design from our experiences with CCEP.

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NOTES

- ⁱ See chapter 1 of this volume. The Dutch terms *pedagogiek* or *pedagogisch* and *didactiek* or *didactisch* cannot be literally translated as ‘pedagogy’ or ‘pedagogic’ and ‘didactics’ or ‘didactic’. *Pedagogiek* or *pedagogisch* refers to the science of the child’s upbringing. Pedagogy as a theory of teaching is what the the Dutch term *didactisch* refer to.